CLAIMS

5 1. A compound of general formula (I)

$$(X)_n$$
 R^a
 R^3
 R^4
 $R^$

in which:

- n is 1, 2 or 3;

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- Ra is a C1-C6-halogenoalkyl having 1 to 5 halogen atoms;
- each substituent X is chosen, independently of the others, as being a hydrogen atom, a halogen atom, a C_1 - C_6 -alkyl or a C_1 - C_6 -halogenoalkyl;
- R¹, R², R³ and R⁴ are chosen, independently of the others as being a hydrogen atom, a halogen atom, a cyano group, a hydroxy group, an amino group, a sulfanyl group, a formyl group, a formyloxy group, a formylamino group, a carboxy group, a carbamoyl group, a N-hydroxycarbamoyl group, a carbamate group, a (hydroxyimino)-C₁-C₆-alkyl group, a C₁-C₆-alkyl, a C₂-C₆-alkenyl, a C₂-C₆-alkynyl, a C_1 - C_6 -alkylamino, a C_1 - C_6 -alkylamino, a C_1 - C_6 -halogenoalkyl having 1 to 5 halogen atoms, a C₁-C₆-halogenoalkoxy having 1 to 5 halogen atoms, a C₁-C₆-alkylsulfanyl, a C₁-C₆-halogenoalkylsulfanyl having 1 to 5 halogen atoms, a C2-C6-alkenyloxy, a C2-C6-halogenoalkenyloxy having 1 to 5 halogen atoms, a C3-C₆-alkynyloxy, a C₃-C₆-halogenoalkynyloxy having 1 to 5 halogen atoms, a C₃-C₆cycloalkyl, a C₃-C₆-halogenocycloalkyl having 1 to 5 halogen atoms, a C₁-C₆alkylcarbonyl, a C₁-C₆-halogenoalkylcarbonyl having 1 to 5 halogen atoms, a C₁-C₆alkylcarbamoyl, a di-C₁-C₆-alkylcarbamoyl, a N-C₁-C₆-alkyloxycarbamoyl, a C₁-C₆alkoxycarbamoyl, a N-C₁-C₆-alkyl-C₁-C₆-alkoxycarbamoyl, a C₁-C₆-alkoxycarbonyl, a C₁-C₆-halogenoalkoxycarbonyl having 1 to 5 halogen atoms, a C₁-C₆alkylcarbonyloxy, a C₁-C₆-halogenoalkylcarbonyloxy having 1 to 5 halogen atoms, a C₁-C₆-alkylcarbonylamino, a C₁-C₆-halogenoalkylcarbonylamino having 1 to 5 halogen atoms, a C₁-C₆-alkylaminocarbonyloxy, a di-C₁-C₆-alkylaminocarbonyloxy, C_1 - C_6 -alkyloxycarbonyloxy, a C₁-C₆-alkylsulphenyl, C1-C6halogenoalkylsulphenyl having 1 to 5 halogen atoms, a C1-C6-alkylsulphinyl, a C1-

 C_6 -halogenoalkylsulphinyl having 1 to 5 halogen atoms, a C_1 - C_6 -alkylsulphonyl, a C_1 - C_6 -halogenoalkylsulphonyl having 1 to 5 halogen atoms, a benzyl, a benzyloxy, a benzylsulfanyl, a benzylsulfinyl, a benzylsulfonyl, a benzylsulfonyl, a phenylsulfanyl, a phenylsulfinyl, a phenylsulfonyl, a phenylsulfonyl, a phenylsulfonyl, a phenylsulfonyl, a phenylsulfonyl or a phenyl group; or R^1 and R^2 may form together a cyclopropyl, a cylcobutyl, a cyclopentyl or a cyclohexyl;

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with the proviso that when three of the four substituents R^1 , R^2 , R^3 and R^4 are a hydrogen atom, then the fourth substituent is not a hydrogen atom;

- R⁵ is chosen as being a hydrogen atom, a cyano group, a formyl group, a hydroxy group, a C₁-C₆-alkyl, a C₁-C₆-halogenoalkyl having 1 to 5 halogen atoms, a C₁-C₆-alkoxy, a C₁-C₆-halogenoalkoxy having 1 to 5 halogen atoms, a C₃-C₆-cycloalkyl, a C₃-C₆-halogenocycloalkyl having 1 to 5 halogen atoms, a C₂-C₆-alkenyl, a C₂-C₆-alkynyl, a C₁-C₆-alkoxy-C₁-C₆-alkyl, a C₁-C₆-cyanoalkyl, a C₁-C₆-alkylamino-C₁-C₆-alkyl, a di-C₁-C₆-alkylamino-C₁-C₆-alkyl, a C₁-C₆-alkylcarbonyl, a C₁-C₆-halogenalkylcarbonyl having 1 to 5 halogen atoms, a C₁-C₆-alkyloxycarbonyl, a C₃-C₇-cycloalkyl, a C₃-C₇-halogenocycloalkyl having 1 to 5 halogen atoms, a C₃-C₇-cycloalkyl-C₁-C₆-alkyl, a C₁-C₆-benzyloxycarbonyl, a C₁-C₆-alkoxy-C₁-C₆-alkylcarbonyl, a C₁-C₆-alkylsulfonyl or a C₁-C₆-halogenoalkylsulfonyl having 1 to 5 halogen atoms; and
- Het represents a 5-, 6- or 7-membered non-fused heterocycle with one, two or three heteroatoms which may be the same or different, Het being linked by a carbon atom and being at least substituted in ortho position;

as well as its salts, N-oxydes, metallic complexes, metalloidic complexes and optically active isomers.

- 2. A compound according to claim 1, characterised in that n is 1 or 2.
- 3. A compound according to claim 1 or 2, characterised in that X is a halogen atom.
 - 4. A compound according to claim 3, characterised in that X is chlorine.
- 5. A compound according to any of the claims 1 to 4, characterised in that R^a is -CF₃.

- 6. A compound according to any of the claims 1 to 5, characterised in that the 2-pyridyl is substituted in 3- and/or in 5-position.
- 7. A compound according to claim 6, characterised in that the 2-pyridyl is substituted in 3-position by X and in 5-position by R^a.
 - 8. A compound according to any of the claims 1 to 7, characterised in that the 2-pyridyl is substituted in 3-position by -Cl and in 5-position by -CF₃.
- 9. A compound according to any of the claims 1 to 8, characterised in that R¹ and R² are chosen, independently of each other, as being a hydrogen atom, a halogen atom, a cyano group, a hydroxy group, a C₁-C₆-alkyl, a C₁-C₆-halogenoalkyl having 1 to 5 halogen atoms, a C₂-C₆-alkenyl, a C₁-C₆-alkoxy, a C₁-C₆-alkylsulfanyl, a C₁-C₆-alkylsulfanyl, a C₁-C₆-alkylsulfanyl, a C₁-C₆-alkoxycarbonyl, a C₁-C₆-alkylsulfanyl alkylcarbonylamino, a C₁-C₆-alkoxycarbonyloxy, a C₁-C₆-alkoxycarbonylamino or a phenyl group.
 - 10. A compound according to claim 9, characterised in that R^1 and R^2 are chosen, independently of each other, as being a halogen atom, a C_1 - C_6 -alkyl, a C_1 - C_6 -halogenoalkyl having 1 to 5 halogen atoms or a C_1 - C_6 -alkylcarbonylamino.

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- 11. A compound according to any of the claims 1 to 10, characterised in that R^3 and R^4 are chosen, independently of each other, as being a hydrogen atom, a halogen atom, a cyano group, a C_1 - C_6 -alkyl, a C_1 - C_6 -halogenoalkyl having 1 to 5 halogen atoms, a C_1 - C_6 -alkylcarbonylamino or a phenyl group.
- 12. A compound according to claim 11, characterised in that R^3 and R^4 are chosen, independently of each other, as being a halogen atom, a C_1 - C_6 -alkyl, a C_1 - C_6 -halogenoalkyl having 1 to 5 halogen atoms or a phenyl group.
- 13. A compound according to any of the claims 1 to 12, characterised in that R^5 is a hydrogen atom or a C_3 - C_7 -cycloalkyl.
- 14. A compound according to any of the claims 1 to 13, characterised in that Het is a five membered ring heterocycle.

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- 15. A compound according to any of the claims 1 to 13, characterised in that Het is a six membered ring heterocycle.
- 16. A process for the preparation of a compound of general formula (I) as defined in any of the claims 1 to 15, which comprises reacting a 2-pyridine derivative of general formula (II) or one of its salt:

$$(X)_{n} \xrightarrow{R^{a}} R^{a}$$

$$R^{1} \xrightarrow{R^{2} \stackrel{1}{R}^{5}} H$$

$$R^{1} \xrightarrow{R^{2} \stackrel{1}{R}^{5}} (II)$$

in which X, n, R^a, R¹, R², R³, R⁴ and R⁵ are as in any of the preceding claims; with a carboxylic acid derivative of the general formula (III)

in which:

- Het is as defined in any of the preceding claims; and
- L^2 is a leaving group chosen as being a halogen atom, a hydroxyl group, -OR⁶, -OCOR⁶, R⁶ being a C₁-C₆ alkyl, a C₁-C₆ haloalkyl, a benzyl, 4-methoxybenzyl, pentafluorophenyl or a group of formula O;

in the presence of a catalyst and, if L² is a hydroxyl group, in the presence of a condensing agent.

17. A process according to claim 16, characterised in that R⁵ is a hydrogen atom and that the process is completed by a further step according to the following reaction scheme:

$$(X)_{n} R^{a}$$

$$(X)_{n} R^{4} R^{3} O$$

$$(X)_{n} R^{4$$

in which: - R¹, R², R³, R⁴, R^a, X, n and Het are as defined in any of the claims 1 to 15;

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- L⁵ is a leaving group chosen as being a halogen atom, a 4-methyl phenylsulfonyloxy or a methylsulfonyloxy;
- comprising the reaction of a compound of general formula (Id) with a compound of general formula (XXII) to provide a compound of general formula (I).
 - 18. A fungicidal composition comprising an effective amount of a compound according to any of the claims 1 to 15 and an agriculturally acceptable support.
- 19. A method for preventively or curatively combating the phytopathogenic fungi of crops, characterised in that an effective and non-phytotoxic amount of a composition according to claim 18 is applied to the plant seeds or to the plant leaves and/or to the fruits of the plants or to the soil in which the plants are growing or in which it is desired to grow them.